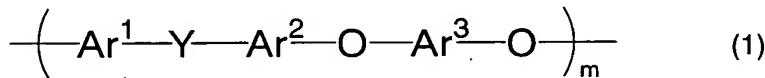
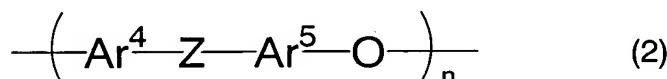


CLAIMS

1. A block copolymer comprising at least one segment having an acid group which is represented by the following formula (1) and at least one segment substantially free from acid groups which comprises repeating units represented by the following formula (2):



(wherein, m represents an integer of 10 or more, Ar^1 , Ar^2 and Ar^3 represent each independently a divalent aromatic group which is optionally substituted by an alkyl group having 1 to 10 carbon atoms, alkoxy group having 1 to 10 carbon atoms, aryl group having 6 to 10 carbon atoms or aryloxy group having 6 to 10 carbon atoms, at least one of Ar^1 and Ar^2 having an acid group, and Ar^3 may have an acid group or may be free from acid groups. Y represents $-\text{CO}-$ or $-\text{SO}_2-$, and each Y in the segment being independently $-\text{CO}-$ or $-\text{SO}_2-$.)



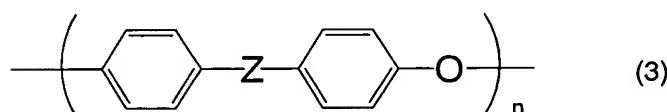
(wherein, n represents an integer of 10 or more, Ar^4 and Ar^5

represent each independently a divalent aromatic group which is optionally substituted by an alkyl group having 1 to 10 carbon atoms, alkoxy group having 1 to 10 carbon atoms, aryl group having 6 to 10 carbon atoms, aryloxy group having 6 to 10 carbon atoms or fluoro group. Z represents -CO- or -SO₂-, and each Z in the segment being independently -CO- or -SO₂-).

2. The block copolymer according to Claim 1, wherein the weight composition ratio of the segment having an acid group to the segment substantially free from acid groups is from 5:95 to 40:60.

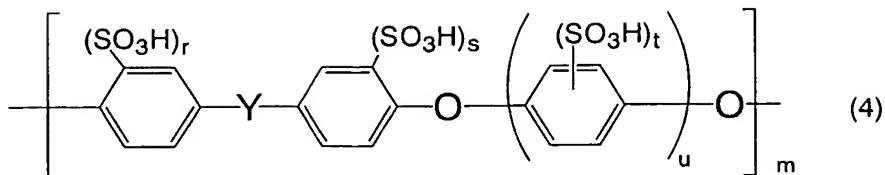
3. The block copolymer according to Claim 1 or 2, wherein the acid group is a strong acid group or a super strong acid group.

4. The block copolymer according to any of Claims 1 to 3, wherein the segment substantially free from acid groups is represented by the following formula (3):



(wherein, n and Z have the same meaning as described above).

5. The block copolymer according to Claim 4, wherein the segment having an acid group is represented by the following formula (4):



(wherein, m and Y have the same meaning as described above. r and s represent each independently 0 or 1, and r+s being 1 or 2. u represents 1 or 2, and t represents 0, 1 or 2).

6. The block copolymer according to any of Claims 1 to 5, wherein the ion exchange capacity is from 0.8 meq/g to 2.4 meq/g.

7. A polymer electrolyte comprising the block copolymer according to any of Claims 1 to 6 as an effective component.

8. A polymer electrolyte membrane comprising the polymer electrolyte according to Claim 7.

9. A polymer electrolyte composite membrane comprising the polymer electrolyte according to Claim 7, and a porous substrate.

10. A catalyst composition comprising the polymer electrolyte according to Claim 7.

11. A polymer electrolyte fuel cell comprising at least one selected from the polymer electrolyte membrane according to Claim 8, the polymer electrolyte composite membrane according to Claim 9, and the catalyst composition according to Claim 10.